

Self - Diagnostic Exam Solutions

1. $\frac{x^4}{yz^8}$
2. $\frac{m^{4x}}{m^{7y}}$
3. $2(y^2 + 4x^2)(y - 2x)(y + 2x)$
4. $\frac{x-3}{x^2 + 4x + 3}$ or $\frac{x-3}{(x+1)(x+3)}$
5. $-3(1 + \sqrt{2})$
6. $\frac{2x}{y}$
7. 16
8. $\frac{ab-1}{a-b}$
9. $\frac{40x+5}{60x-4}$
10. There are no real solutions
11. 3 feet
12. 375 miles
13. $(x-2)^2 = 1$
14. $y = 7x$
15. $-\frac{1}{9}$
16. $2xh + h^2$
17. $\sqrt{x^2 - 6x}$
18. All x less than 9
19. $y = -3x + 7$
20. $25^\circ C$
21. 2
22. $(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2})$ and $(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$
23. Vertex :(-3,12); maximum :12
24. $-\frac{17}{2} \leq x \leq \frac{3}{2}$
25. $x \geq \frac{8}{3}$ or $x \leq -\frac{4}{3}$
26. $-6 \leq x \leq 6$
27. Roots :3 and 4; each has multiplicity 2
28. -0.25
29. 0.5
30. The point is on the unit circle
31. $\frac{7\pi}{4}$
32. 0
33. 150°
34. $\sin(\theta)$
35. $\frac{3}{4}$
36. $\frac{11\pi}{6}$
37. $\frac{x}{y}$
38. π
39. $\sin(\theta)$
40. 1

Problems Numbered:	Topics Covered:
1-7	Basic concepts of Algebra
8-15	Equations, Inequalities, and Problem Solving
16-22	Functions and Graphs
23-27	Polynomial and Rational Functions
28-29	Exponential and Logarithmic Functions
30-40	Trigonometric Functions and Identities